UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/023,238	12/18/2001	Lance T. Ransom	GP-301069	3698

7590 06/20/2005

General Motors Corporation
Legal Staff
Mail Code 482-C23-B21
P.O. Box 300
Detroit, MI 48265-3000

EXAMINER	
KEENAN, JAMES W	

ART UNIT	PAPER NUMBER
3652	

DATE MAILED: 06/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/023,238	RANSOM, LANCE T.	
	Examiner	Art Unit	
	James Keenan	3652	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 March 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4 and 10-13* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4,10 and 11* is/are rejected.

7)☒ Claim(s) *12 and 13* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

1. Claims 1, 10, and 12-13 are objected to because of the following informalities:

in the penultimate line of each of claims 1, 10, and 12, the use of "assemblies" should be --assemblies'-- to denote the possessive;

in claim 13, line 2, "a rack ... plastic" should be --a rack that includes a plurality of plastic--,

line 9, --to-- should be inserted after "relative",

and penultimate line, "assembly" should be --assembly's—to denote possessive.

Appropriate correction is required.

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Foulke et al (US 4,493,606, previously cited) in view of Hayashi et al (JP 8-96471, previously cited) and Cota (US 4,993,559).

Foulke et al show an apparatus for loading wafers (which are considered to be "panel assemblies", as broadly claimed) into a rack 14 (fig. 5) having side and bottom rails 128, 130, respectively, including slots 132 for receiving individual articles, a robot tool 42 mounted on arm 40 and adapted to load articles in the rack, the tool including

sensor 400 (figs. 9-11) and compliant support 410-420 (fig. 16) which allows "soft placement" of the article into the rack.

Foulke et al do not show the rails to comprise "dunnage". Also, the sensor of Foulke et al senses the slots rather than a sensor hole adjacent the slots.

Cota shows a wafer carrier wherein side and bottom rails include "dunnage" 62, 68 (figs. 5, 6) which prevents damage to the wafers.

Hayashi et al show a wafer cassette with sensor holes adjacent slots thereof such that a sensor mounted on a robot arm determines the proper position in the rack from which to pick up an article.

It would have been obvious for one of ordinary skill in the art at the time of the invention to have modified the apparatus of Foulke et al by utilizing dunnage in the rails and sensing a hole adjacent each slot, as suggested by Cota and Hayashi et al, respectively, as this would simply be an art recognized means of preventing damage to wafers while being processed in the rack and an alternate equivalent means of sensing the proper position of wafers in a cassette, the utilization of which would require no undue experimentation and produce no unexpected results.

Re claim 3, although details of the slots are not shown, the examiner takes Official notice that the use of chamfered "lead-in angles" around the periphery of slots in a wafer cassette to guide wafers into position is a well known and obvious design expediency. Note also figs. 4 and 5 of Cota.

4. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Foulke et al in view of Hayashi et al and Cota, as applied to claim 1 above, and further in view of Hounsfield et al (US 4,702,667), of record.

The modified apparatus of Foulke et al does not include a lock for fixing the position of the compliant support.

Hounsfield et al show a robot having a compliant support between an arm and a gripper thereof, wherein a locking device is used to prevent displacement of the compliant support.

It would have been obvious for one of ordinary skill in the art at the time of the invention to have further modified the apparatus of Foulke et al by adding a lock to the compliant support, as shown by Hounsfield et al, so as to provide selective compliance.

5. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Foulke et al in view of Hayashi et al and Cota, as applied to claim 1 above, and further in view of Becicka et al (US 5,098,254), of record.

The modified apparatus of Foulke et al does not show a second sensor on the tool for sensing an object in the rack and thus indicating a preload position.

Becicka et al show a robot having a tool with proximity sensors thereon which sense the position of articles previously loaded onto a pallet and thus indicate the proper position of the next article to be loaded. Although not explicitly stated, if no articles were previously loaded on the pallet, this obviously would be sensed as well and the robot would inherently be guided to a "preload" position.

It would have been obvious for one of ordinary skill in the art at the time of the invention to have further modified the apparatus of Foulke et al with a second sensor for sensing the location of articles in the rack, including the absence of any articles, as shown by Becicka et al, so that the robot could load articles into the appropriate slot.

6. Claims 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Foulke et al in view of Cota and Hounsfield et al.

This rejection is substantially the same as that set forth above with respect to claim 2, except that since no sensor is claimed, the Hayashi et al reference is not used.

7. Applicant's arguments filed 3/28/05 have been fully considered but they are not persuasive. Applicant argues that the quartz rods of Cota are not dunnage "as used by applicant". However, whether it is dunnage used in the same manner as applicant is not germane. The claims merely require "dunnage" per se. Since Cota states that a feature of the quartz rods is to prevent damage to the fragile wafers, it is considered to properly meet the broad recitation of dunnage.

8. Claims 12-13 are allowed, provided the informalities noted above in paragraph 1 are overcome.

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to James Keenan whose telephone number is 571-272-6925. The examiner can normally be reached on Monday through Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eileen Lillis can be reached on 571-272-6928. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

James Keenan
Primary Examiner
Art Unit 3652

jwk
6/14/05